QUALITY AND RATE CONTROL STRATEGY FOR DIGITAL AUDIO

ABSTRACT

An audio encoder regulates quality and bitrate with a control strategy. The strategy includes several features. First, an encoder regulates quantization using quality, minimum bit count, and maximum bit count parameters. Second, an encoder regulates quantization using a noise measure that indicates reliability of a complexity measure. Third, an encoder normalizes a control parameter value according to block size for a variable-size block. Fourth, an encoder uses a bit-count control loop de-linked from a quality control loop. Fifth, an encoder addresses non-monotonicity of quality measurement as a function of quantization level when selecting a quantization level. Sixth, an encoder uses particular interpolation rules to find a quantization level in a quality or bit-count control loop. Seventh, an encoder filters a control parameter value to smooth quality. Eighth, an encoder corrects model bias by adjusting a control parameter value in view of current buffer fullness.